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PATENT
8733.004.01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re application of

Yong Beom KIM

Application No.: 08/936,510

Filed: September 24, 1997

For: **REFLECTIVE TYPE LIQUID CRYSTAL DISPLAY DEVICE AND
METHOD FOR MAKING THE SAME**

Group Art Unit: 2871

Examiner: T. Chowdhury

#40/Req:
Afal
Recens
T. Chowdhury
8-27-03

REQUEST FOR RECONSIDERATION

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

INTRODUCTORY COMMENTS

In response to the Examiner's Final Office Action dated April 29, 2003, the following
remarks are respectfully submitted.

Remarks/Arguments begin on page 2 of this paper.

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REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the subject application. The Final Office Action of April 29, 2003 has been received and the contents carefully reviewed.

In the Final Office Action dated April 29, 2003, the Examiner rejected claims 1, 4, 14, and 16 under 35 U.S.C. § 103(a) as being unpatentable over Yoshimizu et al. (U.S. Patent No. 5,249,071); and rejected claims 20 and 21 under 35 U.S.C. § 103(a) as being unpatentable over Yoshimizu et al. in view of Sugiyama et al. (U.S. Patent No. 5,757,455). The aforementioned rejections are traversed and reconsideration of the claims is respectfully requested in view of the following remarks.

The rejection of claims 1, 4, 14, and 16 under 35 U.S.C. § 103(a) as being unpatentable over Yoshimizu et al. is respectfully traversed and reconsideration is requested.

Claim 1 is allowable over the cited references in that claim 1 recites a combination of elements including, for example, "a reflective electrode over the first substrate." The cited references including Yoshimizu et al., either singly or in combination, do not teach or suggest at least this feature of the claimed invention. Accordingly, Applicant respectfully submits that claim 1 and claim 4, which depends from claim 1, are allowable over the cited references.

Claim 14 is allowable over the cited references in that claim 14 recites a combination of elements including, for example, "forming a reflective electrode over the first substrate." The cited references including Yoshimizu et al., either singly or in combination, do not teach or suggest at least this feature of the claimed invention. Accordingly, Applicant respectfully

submits that claim 14 and claims 16, 20, and 21, which depend from claim 1, are allowable over the cited references.

To establish a *prima facie* case of obviousness, there must at least be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. See MPEP § 2142. The proposed modification can neither render the reference unsatisfactory for its intended purpose nor can the proposed modification change the principle of operation of the reference. See MPEP § 2143.01. Establishment of a *prima facie* case of obviousness requires there be at least some objective reason to modify the reference. See MPEP § 2143.02.

In view of the above, and for the reasons set forth below, Applicant respectfully submits a *prima facie* case of obviousness has not been established with regard to the presently claimed invention.

The Examiner cites Yoshimizu et al. as showing “an electrode (5) over the first substrate (3)” but as failing to disclose “that the electrode is reflective.” The Examiner attempts to cure the deficiencies of Yoshimizu et al. by stating “...it is common and known in the art to use reflective electrodes to obtain a reflective display. Therefore, it would have been obvious... to modify the display of [Yoshimizu et al.] such that using a reflective electrode over the first substrate so that a reflective display is obtained.”

Yoshimizu et al. teaches, at column 11, lines 19-23, “...a pair of upper and lower glass substrates 2 and 3 on the inner surfaces of which transparent electrodes 4 and 5 each having a predetermined pattern are disposed respectively.” Applicant respectfully submits

Yoshimizu et al. exclusively discloses the use of a transparent electrode, and therefore expressly teaches away from the claimed invention.

Applicant respectfully submits that, simply because it may be obvious to form a reflective display using a reflective electrode, it is not obvious to replace a transparent electrode within a transmissive LCD device with a reflective electrode merely for the sake of “obtaining” a reflective LCD device.

Moreover, Applicant respectfully submits replacing the transparent electrode (5) within the transmissive LCD display of Yoshimizu et al. with a reflective electrode would not only alter the principle of operation of Yoshimizu et al. but would also render Yoshimizu et al. inoperative for its intended purpose. For example, transmissive LCD displays express images by selectively transmitting light emitted by artificial light sources such as backlights. Light that is selectively transmitted by transmissive LCD displays is transmitted through liquid crystal material only once. Light that is selectively transmitted by reflective LCD displays, however, is transmitted through liquid crystal material twice. Accordingly, transmissive and reflective LCD displays are generally formed from liquid crystal material having different twist angles. Moreover, reflective LCD display simply do not require the same components transmissive LCD displays require (e.g., backlights, polarizers, etc.). Accordingly, the design considerations between reflective and transmissive LCD displays are different, leading to different principles of operation by which reflective and transmissive LCD displays express images.

Applicant respectfully submits the principle of operation of the transmissive LCD display of Yoshimizu et al., illustrated in Figure 10, without modification by the Examiner, requires the transmission of light through the first biaxial oriented polymer film 14, the third

uniaxial oriented polymer film 13, the second uniaxial oriented polymer films 12, and the first uniaxial oriented polymer film 12. However, if the transparent electrode 5 of Yoshimizu et al. is replaced by a reflective electrode, as suggested by the Examiner, light cannot be transmitted through one of the set of the first biaxial oriented polymer film 14 and the third uniaxial oriented polymer film 13 or through the set of the first and second uniaxial oriented polymer films 11 and 12. Before the proposed modification, light is transmitted through three uniaxial oriented polymer films and one biaxial oriented polymer film. After the proposed modification, light is transmitted twice through either one biaxial/uniaxial oriented polymer film set or through one uniaxial/uniaxial oriented polymer film set. Accordingly, Applicant respectfully submits replacing the transparent electrode 5 would change the principle operation of Yoshimizu et al. Moreover, Applicant respectfully submits replacing the transparent electrode 5 would render the LCD display of Yoshimizu et al. inoperable.

Therefore, Applicant respectfully submits it is not obvious, absent some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to replace the transparent electrode (5) existing within the transmissive LCD device of Yoshimizu et al. with a reflective electrode merely "so that a reflective display is obtained," as asserted by the Examiner.

Applicant respectfully submits there is no motivation or suggestion, either within the references themselves or within the knowledge generally available to one of ordinary skill in the art, for one reasonably skilled in the art to modify the reference and arrive at the claimed invention. Absent such a suggestion or motivation to modify the reference, Applicant respectfully submits that Yoshimizu et al. has merely been modified using the claimed invention as a template via impermissible hindsight reasoning.

In the "Response to Arguments" section of the outstanding Final Office Action, the Examiner asserts "[i]n response to applicant's argument that Yoshimizu... teaches away from using at least a reflective electrode,... it is respectively pointed out... that Yoshimizu does not preclude the use of reflective electrode... [and] nowhere in the specification [of Yoshimizu] discloses that his device would not work in a reflective mode" (Office Action at 8.)

Applicant respectfully submits that the failure of a reference to preclude a particular modification, or to explicitly state that a particular modification would render a disclosed device inoperable, is insufficient to establish a *prima facie* case of obviousness. Rather, a *prima facie* of obviousness is established only (1) when there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference; (2) when there is a reasonable expectation of success; and (3) when the prior art reference teaches or suggests all of the claim limitations. Moreover, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the Applicant's disclosure. See MPEP § 2143. For the reasons set forth above, Applicant respectfully submits a *prima facie* of obviousness has not been established with respect to the claimed invention.

Further, in the "Response to Arguments" section of the outstanding Final Office Action, the Examiner asserts "...it is notoriously well known in the art... to replace a transparent electrode with a reflective electrode to obtain a reflective display." (Office Action at 8.)

Applicants respectfully submit that, in stating "...it is notoriously well known in the art... to replace a transparent electrode with a reflective electrode to obtain a reflective display," it appears as though the Examiner is relying on Official Notice. The Examiner may take Official Notice of facts outside of the record that are capable of instant and unquestionable demonstration as being "well-known" in the art. *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970). As set forth in MPEP § 2144.03, if an applicant traverses an assertion made by an Examiner while taking Official Notice, the Examiner should cite a reference in support of their assertion. Accordingly, Applicant seasonably traverses the use of Official Notice and respectfully requests the Examiner to provide a reference to support their assertions or an affidavit.

Applicant respectfully submits, however, even if it can be shown that a transparent electrode may be replaced with a reflective electrode merely "to obtain a reflective display," there must still be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Yoshimizu et al. and arrive at the claimed invention.

Lastly, in the "Response to Arguments" section of the outstanding Final Office Action, the Examiner asserts "...the invention of Yoshimizu is directed ...mainly towards the use of positive and negative uniaxially oriented polymer films not to the use of transparent electrodes." (Office Action at 8.)

Applicant respectfully submits both the claimed invention and the prior art references must be considered as a whole. Therefore, distilling the invention down to a "gist" or "thrust" of an invention disregards the "as a whole" requirement. See MPEP § 2141.02 Therefore, focusing on the obviousness of modifications instead of the invention as a whole

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is an improper method of establishing obviousness. Accordingly, and assuming *arguendo* that Yoshimizu is directed “mainly towards the use of positive and negative uniaxially oriented polymer films [and] not to the use of transparent electrodes,” Applicant respectfully submits the Examiner must still establish a *prima facie* case of obviousness according to the criteria set forth above, with reference to MPEP § 2143.

Accordingly, Applicant respectfully submits a *prima facie* of obviousness has not been established with respect to the claimed invention.

The rejection of claims 20, and 21 under 35 U.S.C. § 103(a) as being unpatentable over Yoshimizu et al. in view of Sugiyama et al. is respectfully traversed and reconsideration is requested.

Claims 20 and 21 include all of the limitations of claim 14, as discussed above, and Yoshimizu et al. fails to teach or suggest at least these features of independent claim 14 as recited above. Similarly, Sugiyama et al. fails to cure the deficiencies of Yoshimizu et al. Accordingly, Applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness regarding claims 20 and 21 in view of claim 14, as above.

Applicant believes the foregoing amendments place the application in condition for allowance and early, favorable action is respectfully solicited. Should the Examiner deem that a telephone conference would further the prosecution of this application, the Examiner is invited to call the undersigned attorney at (202) 496-7500.

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If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. § 1.136. Please credit any overpayment to deposit Account No. 50-0911.

Respectfully submitted,

MCKENNA LONG & ALDRIDGE, LLP

Date: July 29, 2003

By


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